

IN THE CLAIMS:

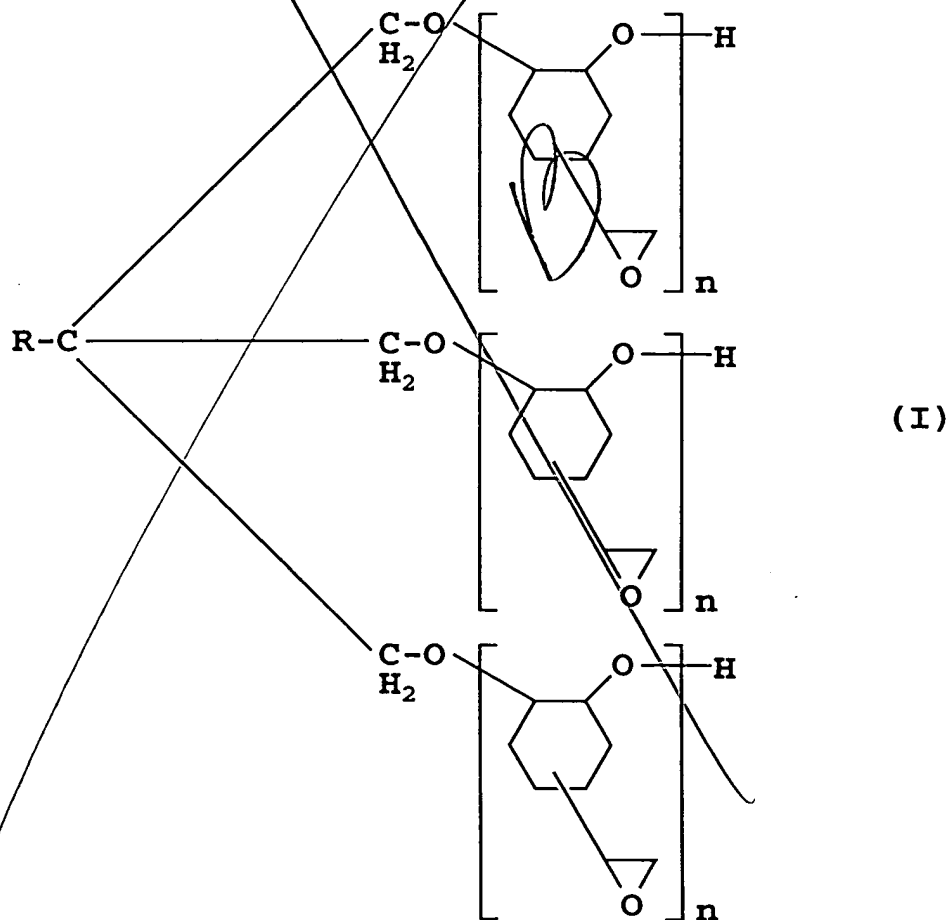
Please cancel claims 1-4 without disclaimer of the subject matter thereof.

Please add new claims 5-8 as follows:

5. A method for producing an optical waveguide comprised of at least one core and a cladding having a refractive index which is lower than that of the at least one core, the method comprising the steps of:

forming an under cladding layer onto a substrate;

forming on the under cladding layer a layer of photosensitive material which is a mixture containing (a) a reactive oligomer present in an amount ranging from 20 to 50 wt % and having general formula (I), and (b) a photopolymerization initiator;



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where R is C_mX_{am+1} , where m is a natural number, X is one of a hydrogen atom, a heavy hydrogen atom, or a halogen group, and n is a natural number, and where viscosity of the photosensitive material may be adjusted by changing the amount of the reactive oligomer;

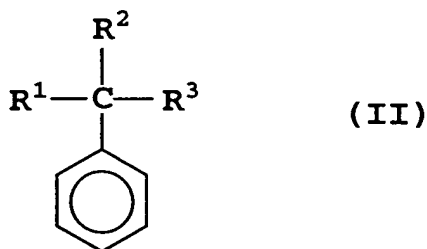
irradiating the layer of photosensitive material with condensed light, either directly or through a mask, to form a latent image in pattern form which includes irradiated areas and non-irradiated areas;

removing the layer of photosensitive material in the non-irradiated areas with a solvent to form a pattern, for use as a core portion, for passage of light; and

forming an upper cladding layer on the core portion and an upper portion in the surroundings thereof.

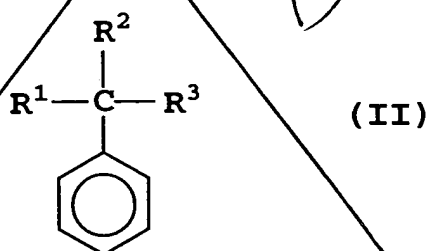
6. The method as claimed in claim 5, wherein the layer of photosensitive material is formed by spin coating.

7. The method as claimed in claim 6, wherein the under cladding layer and the upper cladding layer are formed by applying a photosensitive material containing a reactive oligomer having general formula (II):



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where R^1 , R^2 and R^3 are one of C_mX_{2m+1} or $C_6X_{5-n}Y_n$, in which m and n are each a natural number, and X and Y are one of a hydrogen atom, a heavy hydrogen atom, or a halogen group, and where R^1 , R^2 and R^3 each have at least one epoxy-ring, and where refractive index of the polymer is controlled by changing the amount of the at least one reactive oligomer.

8. The method as claimed in claim 5, wherein the under cladding layer and the upper cladding layer are formed by applying a photosensitive material containing a reactive oligomer having general formula (II):



where R^1 , R^2 and R^3 are one of C_mX_{2m+1} or $C_6X_{5-n}Y_n$, in which m and n are each a natural number, and X and Y are one of a hydrogen atom, a heavy hydrogen atom, or a halogen group, where R^1 , R^2 and R^3 each have at least one epoxy-ring, and where refractive index of the polymer is controlled by changing the amount of the at least one reactive oligomer.